Holbrook Bridge
Little Colorado River
Holbrook vicinity
Navajo County
Arizona

HAER No. AZ-9

PHOTOGRAPHS
HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Western Regional Office
Department of the Interior
450 Golden Gate Avenue
P.O. Box 36063
San Francisco, California 94102

HISTORIC AMERICAN ENGINEERING RECORD

HOLBROOK BRIDGE

Location: State Highway 77, spanning the Little Colorado River south of Holbrook; milepost 388.20; SW1/4 of Section 6, Township 17 North, Range 21 East; Holbrook, Arizona USGS Quadrangle (15 minute series; 1955); Navajo County, Arizona
UTM: 12.576570.3861820

Construction Date: February-September 1928

Engineer: Arizona Highway Department

Contractor: Levy Construction Company, Denver Colorado

Present Owner: Arizona Department of Transportation

Present Use: Two-lane vehicular bridge (to be demolished in 1987)

Description:
superstructure: steel 10-panel rigid-connected Warren pony truss with verticals at alternate panels
substructure : concrete abutments, wingwalls and piers
floor/decking : concrete deck with steel stringers
other features: upper chord/endpost: 2 channels with cover plate and lacing; lower chord: 2 channels with batten plates; vertical/diagonal: 4 angles with continuous plate; floor beam: 1 beam, field bolted to vertical; lateral bracing: 1 angle; pierced concrete guardrails; pin-connected rocker bearings; pedestrian sidewalks cantilevered outside of truss web on both sides.

Significance: In 1914 the El Paso Bridge and Iron Company erected a two-span steel truss to replace the existing timber structure over the Little Colorado River at Holbrook. The bridge stood until the Lyman Dam broke upstream on April 14, 1915, critically damaging its abutments. Although repairable in 1915, ten years later the Holbrook Bridge was deemed no longer suitable to carry traffic when Arizona Highway Department engineers began to survey a portion of the Holbrook - St. Johns Highway (U.S. Highway 70) in November 1925. By July 1926 the AHD bridge department had designed this four-span

pony truss with sidewalks cantilevered from the webs. The bridge was substantial, consuming over 372,000 pounds of structural steel and 789 cubic yards of concrete. The agency waited over a year for the U.S. Bureau of Public Roads to approve the design before letting bids for construction of the Holbrook Bridge. On December 12, 1927, the agency contracted with the Levy Construction Company of Denver under Federal Aid Project 78-B for $56,522. Levy's crew commenced work in February and by April had poured piers 4 and 5. The Holbrook Bridge was completed on September 9th. It has since functioned unaltered and is now scheduled for replacement.

As a major river crossing in the county seat, the Holbrook Bridge and its predecessors formed a regionally important transportational link in northeast Arizona. The bridge is technologically significant as one of the few multiple-span vehicular trusses remaining in a state in which steel was often eschewed in favor of concrete for bridge spans. Such steel structures were never common in Arizona, and through attrition, only four such multi-span pony trusses remain in use: the Holbrook and St. Joseph bridges over the Little Colorado River in Navajo County, and the Charleston and Hereford bridges over the San Pedro River in Cochise County. A representative example of one of the most common vehicular truss configurations in America - the riveted Warren truss - the Holbrook Bridge is a noteworthy early structure.

Report Assembler: Clayton B. Fraser
Principal, Fraserdesign
1269 Cleveland Avenue
Loveland Colorado 80537

October 1986